APPENDIX J
USING THE AM-48 TRANSMISSION TEST SET TO TEST PHONE LINES WITH NWR TONES

The following procedures describe the set up and use of the AM-48 Transmission Test Set to test a phone line using NOAA Weather Radio (NWR) Warning Alert, Specific Area Message Encoder (SAME), and Transmitter Transfer tones. Two AM-48s, one on either end of the phone line, are needed to perform this task. Table J-2 can be used to record the signal levels. Make the necessary number of copies of Table J-2.

J-1 Initial AM-48 Set-up

Refer to Figure J-1 and perform the initial AM-48 set-up as follows:

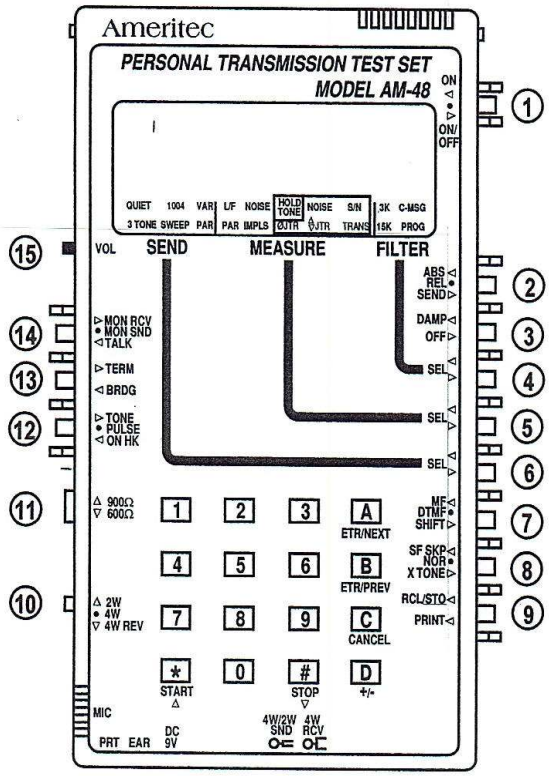

Figure J-1: AM-48 Switch Identification Numbers

Switch #	Setting
1	**ON**
2	**ABS**
3	**OFF**
4	**C-MSG**
5	**L/F**
6	**QUIET**
7	**SHIFT**
8	**NOR**
9	DO NOT USE (if AM-48 locks up, turn off then back on)
10	**4W**
11	**600 Ohm**
12	**TONE**
13	**TERM** (if NWR equipment is <u>not</u> connected to the phone line)
13	**BRDG** (if NWR equipment <u>is</u> also connected to the phone line)
14	**MON SND** to monitor the SEND (RED & GREEN pair)

J-2 Programing NWR Tones

1. Move switch **2** to **SEND**.
2. Press the **A** key three times. *Fr 1* displays.
3. From the keypad, enter **1050**. *Fr 1* displays *Fr 1 1050*. Press the **A** key 2 times.
4. Program *Fr 2* by pressing **1562**. *Fr 2* displays *1562.* Press the **A** key 2 times.
5. Repeat step 4 for *Fr 3 (1800)*, Fr 4 (2083), *Fr 5 (2400)*, *Fr 6* to *Fr 9 (50)*.
6. After you complete programming, press switch **6** to change to *1004*, then back to **QUIET**.
7. To inject the tone, press and hold the keypad number for your tone (see Table J-1).

Table J-1: Tone Keypad Numbers

Keypad	Tone Frequency	NWR Purpose
1	1050	WAT tone
2	1562	Logic 0 (SAME)
3	1800	TX Transfer tone
4	2083	Logic 1 (SAME)
5	2400	TX Transfer tone

J-3 Testing Telephone Circuits

1. Connect an AM-48 to each end of the TELCO line to be tested using the following steps:
   a. Connect the RED and GREEN leads to the TRANSMIT pair (usually BLU/WHT and WHT/BLU) or labeled T and R.
   b. Connect the YELLOW and BLACK leads to the RECEIVE pair (usually ORG/WHT and WHT/ORG) or labeled T1 and R1.
2. If not already performed, set up both AM-48s using the settings in section J-1.
3. At the local end (the sending AM-48), ensure that switch **6** has selected the **1004** mode (1004 Hz tone), switch **13** is in **TERM** (if NWR equipment is not connected to the phone line), and switch **14** is in **MON SND**.
4. On the distant end, the receiving AM-48 should be set up so that switch **6** is in the **QUIET** mode, switch **13** is in **TERM** (if NWR equipment is not connected to the phone line), and switch **14** is in the **MON RCV** position.
5. Have the person on the distant end read what is on their AM-48. It should read *-10 dBm* ± 1dBm. Record the value in table J-2.

6. On the (sending) local AM-48, press switch **6** to set the mode to **QUIET**.

7. On the local AM-48, press **1** on the keypad. A 1050 Hz tone should be heard if the volume knob (15) is turned up. Ask the person on the distant end to read the level. It should be *-10 dBm*. Record the value in Table J-2.

8. Repeat step 7 with the remaining 4 frequencies (i.e., press **2**, then **3**, then **4**, then **5**). Ask the person on the distant end what level they received and record the level in Table J-2.

9. Reverse who transmits and who receives (distant transmits, local receives).

   a. On the distant end, set up the AM-48 as follows:
   switch **2** to **SEND>**, switch **6** to **1004**, switch **14** to **MON SND**

   b. On the local end, set up the AM-48 as follows:
   switch **2** to **ABS<**, switch **6** to **QUIET**, and switch **14** to **MON RCV**

10. Record the value for the 1004 Hz tone (local side receiving) in Table J-2. At the distant end, proceed with steps 6 to 8 (substituting “distant” for “local”) and record the values.

11. Email results to the Regional NWR Specialist and retain for your records.

Table J-2

Local end: _____
(NWSFO side)

Distant end: _____
(NWR transmitter side)

Date _____

Freq at 0 dBm	Local to Distant values (TX)	Distant to Local values (RX)
1004 Hz		
1050 Hz		
1562 Hz		
1800 Hz		
2083 Hz		
2400 Hz		